



# UNIDADE DE GESTÃO DE PROJETOS ESPECIAIS

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## Terms of Reference

# Technical Assistance for the Development and Implementation of SIMple Service Modules

## 1. Introduction

The Government of the Republic of Cape Verde has received a \$15 million loan from the International Development Association (World Bank) for the Harmonization and Improvement of Statistics in West Africa (HISWAP)/Cape Verde project, which aims to strengthen the statistical system of participating countries and regional bodies in Africa to produce, disseminate and enhance the use of key economic and social statistics, and intends to use part of the proceeds for consultancy services.

In the implementation and consolidation of e-governance in Cabo Verde, municipal councils were the first institutions to be equipped with IT, with the introduction of the SIM (Municipal Information System) application.

The first version of SIM was implemented in the municipalities between 2001 and 2003, first in the pilot municipalities of Praia, Sal and São Vicente and then, in 2007, in São Nicolau. From 2008 to 2012, SIM 2.0 was updated and implemented throughout the country, except for São Vicente. Today, SIM 2.0. is in operation in every municipality in the country. Some features have been implemented in the municipalities of Sal, São Vicente and Praia, while in others they were not.

SIM 2.0 is essentially focused on accounting/financial management, as it was created as an IT tool for municipal financial management, and more specifically for budget



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execution. For this reason, most of the services provided are consistent with budgetary implementation, i.e. accounting for income and expenditure, and not from a procedural point of view.

Despite the improvements that SIM 2.0 has brought to town halls, this system is already obsolete, having been developed using the old framework, with a different layout to other modern applications, resulting in high maintenance costs.

In 2017, SIM LAND (SIM 3.0) was implemented in the town halls of Sal, São Vicente, Maio and Boa Vista, to manage buildings in areas that are registered, corresponding to an increase in functionality in these town halls.

However, this system is unsuited to the current and future context, and it is in this context that has arisen the need to equip town halls with a robust information system, comprising all the necessary functionalities and covering all areas of municipal management and action. We will call this system SIMple.

The basic principles of the SIMple project are shown in figure 1 below:



Figura 1 SIMple principles



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To achieve this, it is necessary to have an integrated vision of the town hall's services in order to serve citizens and businesses quickly, with quality, at lower cost, with transparency and security.

The Citizen Service Lifecycle (CSLC) is therefore proposed as an integration element for the whole Municipal Information and Management System.

## 2. Objectives

The aim is to contract a consulting firm to upgrade the SIM by developing and implementing SIMple service modules in all the country's town halls, ensuring all the necessary integrations.

### 2.1. *Specific Objectives*

- Provide municipalities with an electronic platform to respond quickly and efficiently to user demand;
- Integrate municipal services and make the one-stop-shop principle a reality;
- Adopt the paperless principle for town halls;
- Improve the communication system between municipalities, with future regional structures, with centralized government structures and with the private sector, promoting the creation of synergies between them;
- Focus municipal management on the citizen, and enable the citizen to participate in municipal management;
- Leverage objective-oriented planning and management by providing tools to assist in the decision-making process;
- Respect the autonomy of each town hall while implementing standardized rules and procedures;



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## 2.2. *Main Focus*

### a) Provision of services:

- Provide public information to the Town Hall;
- Dematerialize processes, providing all services quickly using the current process in the system;
- Provide services via different channels: face-to-face, web and mobile;
- Integrate with other systems to speed up and reduce the cost of services;
- Enable users to obtain information on their status with regard to the Town Hall (requests, debts, invoices, etc.) as well as other public institutions, receive notifications on the status of their services and payment deadlines;
- Introduce authentication and cross-checking services.

## 3. **Scope, Tasks and Deliverables**

### 3.1. *Scope*

The scope of the SIMple Municipal Management electronic platform project for the Services modules includes the following components:

- **Application Component: SIMple**

Process analysis, development, testing and quality assurance, implementation (deployment), drafting the application manual, training users, ensuring stabilization and monitoring.

- **Web Portal**

Analysis, creation and hosting of a web portal, providing information and transactional content for each municipality.



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- **Mobile application**

Analysis, creation and hosting of App for Management Statistics.

- **Business Intelligence Solution**

Analysis, development and deployment of a Business Intelligence solution.

### 3.2. *Technical requirements of the Solution*

SIMple shall be mandatorily developed with the IGRPweb framework, installed in a Kubernetes Cluster, with High Availability and with a generic Application template.

The architecture to be proposed should:

- Separate the various municipal management businesses, allowing SIMple to develop in a modular way;
- Ensure that the data of each municipality is separated, ensuring that each municipality is in charge of its own data;
- Separate the municipal data layer from the system functionalities layer;
  - Each application module will have a dedicated connection to its database
  - Modules exchange services with each other at the application level and not at the database level
  - Services are catalogued and published for inter-municipal integration, and interoperability with external applications and with the private sector
- Making SIMple maintenance easier;
- Global data involving data owners other than the mayor's office will be consulted using the API logic, via the PDEX interoperability platform.



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### **3.3. Products to be developed**

#### **1. SIMPLE Application Component:**

- a. **Users** - registration and services directly connected to citizens/users, creating a user-focused management;
  - b. **Social Action** - management of the support offered by the Town Hall;
  - c. **Requests** - management of requests made in the Town Hall, allowing processes to be monitored. It includes customized/parameterized request flows according to the needs of each Town Hall;
  - d. **Commercial Licensing** - which allows for the allocation of commercial licenses under the responsibility of the Town Hall. It is part of the Commercial Licensing System.
  - e. **Cemetery Management** - This module makes it possible to manage cemeteries, including the sale of graves, the work carried out on graves, the registration of graves with their exact location through georeferencing.
  - f. **Management of Municipal Markets** - This module allows you to manage and collect from traditional retail structures organized by georeferenced stores and stalls.
  - g. **Document Management** - management of all archives, both physical and digital;
1. **Mobile Application:** applications for mobile devices (smartphone and tablet) that provide statistical data to help municipal managers in their decision-making.
  2. **Web portal:** electronic access interface to municipal services in one place, allowing to bring in the digital environment services already established in the in-person-attendance.
  3. **Business Intelligence:** provide managers with tools to analyze municipal management and help in the decision-making process.



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### 3.4. *integrations*

The selected firm must ensure interoperability with other businesses:

- General Directorate of Registration, Notary and Identification;
- National Directorate of State Revenue;
- General Directorate of Road Transport;
- Interbank Firm and Payment Systems;

## 4. Team Composition & Required Qualifications

### 4.1. *Required experience and references*

The consultancy firm must have at least 3 years' experience in the development of electronic governance applications, with relevant experience in the development of web, mobile, portal and business intelligence (BI) systems.

It must be supported by at least two (2) references from clients for whom a similar service has currently been provided.

### 4.2. *The project team shall be composed of the following key experts:*

#### 1) **One (1) Project Coordinator**

- Degree in Computer Science, Engineering or equivalent;
- Mastery of Agile Methodology;
- At least 5 years of experience - experience in managing a software development team leading to the complete (and correct) adoption of modern software engineering and delivery practices, in-depth knowledge and experience in designing and implementing cloud solutions, with solid



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experience in the analysis, planning, design, development, implementation and documentation of software solutions.

## 2) Three (3) Developers

- BA degree in Computer Science, Mathematics or equivalent
- at least three (3) years of experience in the development and programming of information systems;
- development experience in IGRPweb, distributed version control systems (such as Git) and CI/CD development;
- Proficiency in the following technologies: Object Oriented Programming (OOP), particularly Java; PL/SQL; JavaScript, HTML and CSS;
- Ability to work collaboratively with other team members to complete all levels of testing (e.g., system, integration and regression, etc.);

## 3) One (1) Web Developer

- Degree in Computer Science, Mathematics or related areas
- At least three (3) years' experience in developing and programming information systems;
- Experience with JavaScript and jQuery;
- Experience with browser development tools and browser compatibility;
- Experience in integrated development involving front-end and back-end code;
- Strong sense of aesthetics and design;
- Experience with web design and UI/UX
- Knowledge of web compatibility and performance;
- Familiar with Photoshop, Illustrator and InDesign;
- Knowledge of development tools such as GIT and code editors;
- Knowledge of the liferay framework.





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## 4) One (1) Mobile Developer

- Degree in Computer Science, Engineering or equivalent;
- At least three (3) years of experience - experience in application development and maintenance, testing, incident resolution and documentation;
- Experience in developing mobile applications for iOS/Android platforms and web frontend associated with responsive design.

## 5) One (1) Analyst

- Degree in Computer Science, Engineering or equivalent;
- At least three (3) years' experience as an analyst in the area of electronic governance;
- Proven knowledge and experience of a software lifecycle and all its phases, including requirements, design, development and testing;
- Knowledge of object-oriented programming (OOP), specifically Java;
- Knowledge of PL/SQL languages;
- Knowledge of web languages (JavaScript, HTML and CSS).

## 6) One (1) Data Analyst

- Degree in Statistics and Information Management, Information System, Computer Science or Information Technology areas;
- Proficiency in programming languages: Excel, SQL Server, MySQL;
- Data viewing tool (Microstrategy, Power BI, Tableau, others), Python or R;
- Mastery of Visual Studio tools;
- Mastery of Data Analytics;
- Mastery of Machine Learning;



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- Proficiency in ETL, Star Model and DataWarehouse methodologies and tools.

### 5. Deliverables, Reports and Scheduling

<i>Deliverables</i>	<i>Description</i>	<i>Type</i>	<i>Payment after customer approval</i>	<i>calendar</i>
<b>E0. Inception Report</b>	<i>Summary of the work to be carried out under the contract, including the training plan</i>	<i>Report</i>	10%	<i>Contract signature + 15 days</i>
<b>E.1 Training on the Portal and Modules:</b> <ul style="list-style-type: none"> <li>• <b>Requests</b></li> <li>• <b>Users</b></li> </ul>	<i>Execution of training on functionalities developed so far in the Modules and the Portal; Delivery of Training Reports; Delivery of functionality manuals.</i>	<i>Training; Manual; Reports</i>	20%	<i>Contract signing + 4 months</i>
<b>E.2 Module delivery:</b> <ul style="list-style-type: none"> <li>• <b>Requests</b></li> <li>• <b>Users</b></li> <li>• <b>Social Action</b></li> </ul> <b>Training in the Portal and Modules:</b> <ul style="list-style-type: none"> <li>• <b>Requests</b></li> <li>• <b>Users</b></li> <li>• <b>Social Action</b></li> <li>• <b>Licensing</b></li> </ul>	<i>The "Requests", "Users" and "Social Action" modules developed and functional, with the respective integrations, statistical dashboards and user manuals completed.  Training in the new functionalities developed so far; Training reports delivered; Delivery of functionality manuals.</i>	<i>Software; Manual; Training; Reports</i>	20%	<i>Contract signing + 8 months</i>
<b>E.3 Delivery of the Portal and Modules:</b> <ul style="list-style-type: none"> <li>• <b>Document Management</b></li> <li>• <b>Licensing</b></li> <li>• <b>Business Intelligence (B.I.)</b></li> </ul> <b>Training in Modules:.</b> <ul style="list-style-type: none"> <li>• <b>Document Management</b></li> <li>• <b>Licensing</b></li> <li>• <b>Business Intelligence (B.I.)</b></li> </ul>	<i>The Portal and the "Document Management", "Licensing" and "B.I." Modules developed and functional with the respective Integrations, Statistical Dashboards, Reports and User Manuals completed.  Training in the new functionalities developed so far;</i>	<i>Software; Manual; Training; Reports</i>	20%	<i>Contract signing + 11 months</i>



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	<i>Training reports delivered;</i>			
<b>E.4 Final Report</b>	<i>Delivery of the final report, after the client has signed the Acceptance Terms of the developed and implemented modules,</i>	<i>Report</i>	<i>30%</i>	<i>Contract signing + 12 months</i>

### 6. Client Counterparts

The Association of Municipalities and of Town Hall must ensure a project execution team and a project manager on behalf of the client. This team must consist of at least one (1) person for each of the team's business areas.

The teams must work closely with all the Town Halls, sharing all the documents and ensuring the validation of the Town Halls in each document and in the Stage environment, and must also respond to requests in a timely manner and carry out the validations in a specified time. Each team is responsible for:

- a) Meeting with system analysts to explain the business;
- b) Providing information necessary for requirements gathering;
- c) Validating the drafted specification documents;
- d) Validating the functionalities in the Internship environment;
- e) Participating in validation workshops.

Núcleo Operacional para a Sociedade de Informação (NOSi), as the project's technological partner, will:

- a) Support and monitor the analysis of the information system and structure;
- b) Ensure the infrastructure that hosts the databases and application servers that support the solution;



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- c) Ensure interoperability and integration of the entire platform;
- d) Provide security/audit/pentest/vpn/vfirewall;
- e) Train the consulting firm on the IGRPweb platform;
- f) Train the consulting firm on the PDEX platform.

### **7. Work duration**

This project must be implemented within a period of no more than twelve (12) months after the signing of the contract.

### **8. Work organization**

The selected consulting firm must carry out the work in close collaboration with the Association of Municipalities (representing the local councils), which will supervise and support the implementation of the project. In addition, the selected firm must report to the Special Projects Management Unit (UGPE).